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PEACH MOSAIC

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how
we
fight
it

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U.S. DEPARTMENT OF AGRICULTURE

PEACH MOSAIC

how we fight it



Leaves from mosaic-infected trees showing various types of leaf-mottling.

Peach mosaic, a virus disease, was first found in the United States in 1931. From 1931 to 1961 it caused more than \$11 million worth of damage to peach orchards in this country. In this time it ruined about 500,000 peach trees.

Peach mosaic is found in most of the peach-growing areas of Arizona and New Mexico and in certain of the peach-growing areas of California, Colorado, Utah, Texas, Arkansas, and Oklahoma. It has also been reported in three States in Mexico bordering the United States. Control measures are necessary to keep the disease from spreading to noninfected areas, and to reduce damage in areas where it is established.

Control of peach mosaic is a cooperative undertaking of growers, nurserymen, counties, States, and the Plant Pest Control Division, U.S. Department of Agriculture. The control work was started in 1935; since then peach mosaic has apparently been eliminated from 24 counties in California, Colorado, Utah, Texas, and Arkansas. The overall percentage of infected trees was reduced from 4.16 percent in 1935 to 0.05 percent in 1961.



BN-3491

BN-3495

*Early summer. Left, twig with normal leaves.
Right, twig with mottled and deformed leaves.*

DAMAGE AND SYMPTOMS

Peach mosaic ruins the fruit produced by trees of most varieties. Infected trees do not recover from the disease, and they are a source of infection to other trees as long as they stand. Freestone varieties, such as Elberta and J. H. Hale, are the most severely affected.

Easily recognized symptoms of peach mosaic are: Mottling that crosses the veins in the leaves; rough, bumpy fruit (in most varieties); retarded development of foliage; and shortened internodes (spaces between leaves or between stems).

Some varieties of peach, including Carmen, Red Bird Cling, Orange Cling, and Rochester, at times are infected without showing any symptoms. Infection without symptoms may also occur in some varieties of plum, including Maynard, and in some varieties of nectarine. Although these varieties when diseased may not show any symptoms, they are nevertheless sources for spread of the disease.

HOW IT IS SPREAD

Peach mosaic is spread to healthy peach trees from diseased trees. Besides the peach, these trees are hosts: Nectarine, almond, apricot, prune, and wild and cultivated plum.

The disease is spread to healthy trees in two ways—(1) by using buds or grafts from infected trees and (2) by a mite of the Eriophyid group.

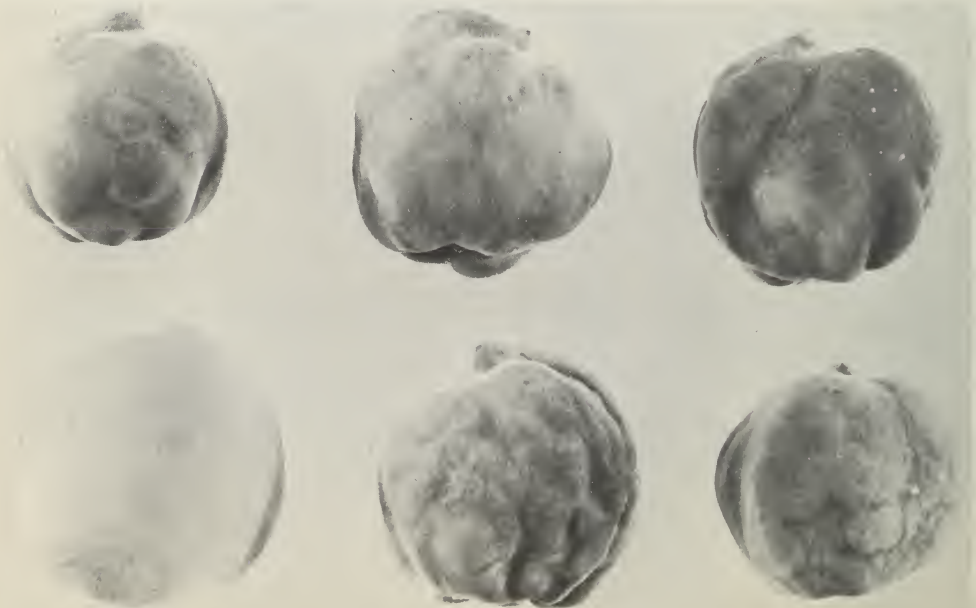
The mite vector (or disease transmitter) was discovered in 1955. This mite is so small that it cannot be seen without magnification; it lives concealed and protected in leaf buds. Its favored hosts are peach and certain plum trees, particularly native American plums. Mite feeding retards peach buds and prevents them from growing into normal leaves and shoots. While this feeding enables the mites to persist, it is not extensive enough to damage the peach tree directly.

Natural spread of the virus occurs throughout the growing season; in experimental work, greatest spread was determined to be during April, May, and June. As bud scales loosen or are shed, the mite is apparently scattered from tree to tree by air currents.

Peach mosaic is not spread by mechanical contact (such as pruning), by irrigation water, or by soil. After removal of diseased trees, replants can be set without any more danger of becoming infected than any other tree in the planting.

Mosaic-affected peaches. Peach at lower left is normal.

BN-3492





RETARDED DEVELOPMENT OF FOLIAGE

Spring. Growth on left branch is normal. Growth on other branches has been retarded by mosaic.

Summer. Growth on branches at left is normal. Growth on branches at right has been retarded by mosaic.

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CONTROL MEASURES

Quarantine

The Federal Government assists the affected States in maintaining uniform State quarantines to keep peach mosaic from spreading. Nurseries may sell only stock and budwood that is free of peach mosaic. Only nursery stock and budwood produced and handled in compliance with State quarantine requirements may be certified for movement inside or outside the quarantine area.

Inspection

Federal and State inspectors inspect every peach tree in commercial orchards in designated quarantine areas each year. They also inspect trees outside the areas.

Inspections are made in the spring as soon as leaf development permits symptoms of the disease to be recognized.

When inspectors find a tree infected with peach mosaic, they notify the grower and report the infection to the State regulatory officer, who places the area under regulation.

Care of Orchards

When an inspector reports to you that there is peach mosaic in your orchard, you should delimb the infected trees at once. As soon as possible after delimbing the infected trees, remove the infected stumps or use an approved chemical treatment to kill them. It is as important to remove trees showing mild symptoms of the disease as it is to remove severely infected trees.

Trees in an orchard should be kept in a vigorous condition. Old, weak, abandoned, and nonprofitable trees harbor pests, and should be removed.

Prepared by
Plant Pest Control Division
Agricultural Research Service

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BN-3493

Shortened spaces between stems. Left, normal twig. Right, twig infected by mosaic.

Left, healthy peach bud. Right, peach bud infested by mites.

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